



PHOE0136.ST25.txt  
SEQUENCE LISTING

<110> Ensor, Charles Mark  
Holtsberg, Frederick Wayne  
Clark, Mike A.

<120> NOVEL MUTATED FORM OF ARGININE DEIMINASE

<130> PHOE-0136

<140> US 10/645,723

<141> 2003-08-21

<150> US 09/564,559

<151> 2000-05-04

<160> 10

<170> PatentIn version 3.2

<210> 1

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<212> PRT

<213> Mycoplasma hominis

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Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile  
35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu His Gln Ser Phe Val Lys Ile  
50 55 60

Met Lys Asp Arg Gly Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Lys Ala Ala Lys Glu Glu Phe Ile Glu  
85 90 95

Thr Phe Leu Glu Glu Thr Val Pro Val Leu Thr Glu Ala Asn Lys Lys  
100 105 110

Ala Val Arg Ala Phe Leu Leu Ser Lys Pro Thr His Glu Met Val Glu  
115 120 125

Phe Met Met Ser Gly Ile Thr Lys Tyr Glu Leu Gly Val Glu Ser Glu  
130 135 140

Asn Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp  
145 150 155 160

Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg Tyr  
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165

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Ile Val Arg Arg Arg Glu Thr Leu Phe Ala Arg Phe Val Phe Arg Asn  
 180 185 190

His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met Lys  
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 210 215 220

Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu Leu  
 225 230 235 240

Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg Ile Val  
 245 250 255

Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr Trp  
 260 265 270

Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala Asn  
 275 280 285

Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala Glu  
 290 295 300

Pro Gln Pro Gln Leu Asn Gly Leu Pro Leu Asp Lys Leu Leu Ala Ser  
 305 310 315 320

Ile Ile Asn Lys Glu Pro Val Leu Ile Pro Ile Gly Gly Ala Gly Ala  
 325 330 335

Thr Glu Met Glu Ile Ala Arg Glu Thr Asn Phe Asp Gly Thr Asn Tyr  
 340 345 350

Leu Ala Ile Lys Pro Gly Leu Val Ile Gly Tyr Asp Arg Asn Glu Lys  
 355 360 365

Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Thr Val Leu Pro Phe His  
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 385 390 395 400

Pro Leu Ser Arg Lys Asp Val Lys Trp  
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&lt;210&gt; 2

&lt;211&gt; 409

&lt;212&gt; PRT

&lt;213&gt; Mycoplasma hominis

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 Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile  
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 Leu Glu Ser His Asp Ala Arg Lys Glu His Gln Ser Phe Val Lys Ile  
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 Met Lys Asp Arg Gly Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala  
 65 70 75 80  
 Glu Thr Tyr Asp Leu Ala Ser Lys Ala Ala Lys Glu Glu Phe Ile Glu  
 85 90 95  
 Thr Phe Leu Glu Glu Thr Val Pro Val Leu Thr Glu Ala Asn Lys Glu  
 100 105 110  
 Ala Val Arg Ala Phe Leu Leu Ser Lys Pro Thr His Glu Met Val Glu  
 115 120 125  
 Phe Met Met Ser Gly Ile Thr Lys Tyr Glu Leu Gly Val Glu Ser Glu  
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 Asn Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp  
 145 150 155 160  
 Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg Tyr  
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 Ile Val Arg Arg Arg Glu Thr Leu Phe Ala Arg Phe Val Phe Arg Asn  
 180 185 190  
 His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met Lys  
 195 200 205  
 Met Pro Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Glu Thr Leu  
 210 215 220  
 Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu Leu  
 225 230 235 240  
 Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg Ile Val  
 245 250 255  
 Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr Trp  
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Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala Asn  
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Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala Glu  
290 295 300

Pro Gln Pro Gln Leu Asn Gly Leu Pro Leu Asp Lys Leu Leu Ala Ser  
305 310 315 320

Ile Ile Asn Lys Glu Pro Val Leu Ile Pro Ile Gly Gly Ala Gly Ala  
325 330 335

Thr Glu Met Glu Ile Ala Arg Glu Thr Asn Phe Asp Gly Thr Asn Tyr  
340 345 350

Leu Ala Ile Lys Pro Gly Leu Val Ile Gly Tyr Asp Arg Asn Glu Lys  
355 360 365

Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Thr Val Leu Pro Phe His  
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35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu His Gln Ser Phe Val Lys Ile  
50 55 60

Met Lys Asp Arg Gly Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Lys Ala Ala Lys Glu Glu Phe Ile Glu  
85 90 95

PHOE0136.ST25.txt

Thr Phe Leu Glu Glu Thr Val Pro Val Leu Thr Glu Ala Asn Lys Lys  
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Ala Val Arg Ala Phe Leu Leu Ser Lys Pro Thr His Glu Met Val Glu  
115 120 125

Phe Met Met Ser Gly Ile Thr Lys Tyr Glu Leu Gly Val Glu Ser Glu  
130 135 140

Asn Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp  
145 150 155 160

Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg Tyr  
165 170 175

Ile Val Arg Arg Arg Glu Thr Leu Phe Ala Arg Phe Val Phe Arg Asn  
180 185 190

His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met Lys  
195 200 205

Met Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Glu Thr Leu  
210 215 220

Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu Leu  
225 230 235 240

Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg Ile Val  
245 250 255

Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr Trp  
260 265 270

Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala Asn  
275 280 285

Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala Glu  
290 295 300

Pro Gln Pro Gln Leu Asn Gly Leu Pro Leu Asp Lys Leu Leu Ala Ser  
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Ile Ile Asn Lys Glu Pro Val Leu Ile Pro Ile Gly Gly Ala Gly Ala  
325 330 335

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340 345 350

Leu Ala Ile Lys Pro Gly Leu Val Ile Gly Tyr Asp Arg Asn Glu Lys  
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Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Thr Val Leu Pro Phe His  
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35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu His Gln Ser Phe Val Lys Ile  
50 55 60

Met Lys Asp Arg Gly Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Lys Ala Ala Lys Glu Glu Phe Ile Glu  
85 90 95

Thr Phe Leu Glu Glu Thr Val Pro Val Leu Thr Glu Ala Asn Lys Glu  
100 105 110

Ala Val Arg Ala Phe Leu Leu Ser Lys Pro Thr His Glu Met Val Glu  
115 120 125

Phe Met Met Ser Gly Ile Thr Lys Tyr Glu Leu Gly Val Glu Ser Glu  
130 135 140

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145 150 155 160

Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg Tyr  
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Ile Val Arg Arg Arg Glu Thr Leu Phe Ala Arg Phe Val Phe Arg Asn  
180 185 190

PHOE0136.ST25.txt

His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met Lys  
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Met Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Glu Thr Leu  
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Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu Leu  
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Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg Ile Val  
245 250 255

Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr Trp  
260 265 270

Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala Asn  
275 280 285

Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala Glu  
290 295 300

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Ile Ile Asn Lys Glu Pro Val Leu Ile Pro Ile Gly Gly Ala Gly Ala  
325 330 335

Thr Glu Met Glu Ile Ala Arg Glu Thr Asn Phe Asp Gly Thr Asn Tyr  
340 345 350

Leu Ala Ile Lys Pro Gly Leu Val Ile Gly Tyr Asp Arg Asn Glu Lys  
355 360 365

Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Thr Val Leu Pro Phe His  
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385 390 395 400

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Page 7

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Leu Lys Ala Asn Asp Ile Asn Val Val Glu Leu Ile Asp Leu Val Ala  
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Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Lys Leu Ile Glu  
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Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Glu His Lys Val  
 100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
 115 120 125

Glu Ile Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Gly Ala  
 130 135 140

Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg  
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Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg  
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Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Ser  
 180 185 190

Asn His Pro Lys Leu Ile Asn Thr Pro Trp Tyr Tyr Asp Pro Ser Leu  
 195 200 205

Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
 210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Gln Thr Val Thr Leu  
 225 230 235 240

Leu Ala Lys Asn Ile Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
 245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
 260 265 270

Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala  
 275 280 285

Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala  
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290

295

Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Gly Leu Leu Gln  
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Ser Ile Ile Asn Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Glu Gly  
325 330 335

Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
340 345 350

Tyr Leu Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
355 360 365

Lys Thr Asn Ala Ala Leu Glu Ala Ala Gly Ile Lys Val Leu Pro Phe  
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Leu Lys Ala Asn Asp Ile Asn Val Val Glu Leu Ile Asp Leu Val Ala  
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Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Lys Leu Ile Glu  
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Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Glu His Glu Val  
100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
115 120 125

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 Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Ser  
 180 185 190  
 Asn His Pro Lys Leu Ile Asn Thr Pro Trp Tyr Tyr Asp Pro Ser Leu  
 195 200 205  
 Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
 210 215 220  
 Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Gln Thr Val Thr Leu  
 225 230 235 240  
 Leu Ala Lys Asn Ile Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
 245 250 255  
 Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
 260 265 270  
 Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala  
 275 280 285  
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 325 330 335  
 Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
 340 345 350  
 Tyr Leu Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
 355 360 365  
 Lys Thr Asn Ala Ala Leu Glu Ala Ala Gly Ile Lys Val Leu Pro Phe  
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PHOE0136.ST25.txt

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35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu Gln Ser Gln Phe Val Ala Ile  
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Leu Lys Ala Asn Asp Ile Asn Val Val Glu Thr Ile Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Arg Lys Ile Glu  
85 90 95

Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Ala His Lys Lys  
100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
115 120 125

Glu Leu Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Val Glu Ala  
130 135 140

Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg  
145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg  
165 170 175

Tyr Lys Val Arg Arg Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Arg  
180 185 190

Asn His Pro Lys Leu Val Asn Thr Pro Trp Tyr Tyr Asp Pro Ala Met  
195 200 205

Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
210 215 220

PHOE0136.ST25.txt

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Val Thr Leu  
225 230 235 240

Leu Ala Lys Asn Leu Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
260 265 270

Trp Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala  
275 280 285

Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala  
290 295 300

Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Lys Leu Leu Gln  
305 310 315 320

Ser Ile Ile Asn Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Glu Gly  
325 330 335

Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
340 345 350

Tyr Ile Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
355 360 365

Lys Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Lys Val Leu Pro Phe  
370 375 380

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385 390 395 400

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PHOE0136.ST25.txt

Leu Glu Ser His Asp Ala Arg Lys Glu Gln Ser Gln Phe Val Ala Ile  
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Leu Lys Ala Asn Asp Ile Asn Val Val Glu Thr Ile Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Arg Lys Ile Glu  
85 90 95

Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Ala His Glu Glu  
100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
115 120 125

Glu Leu Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Val Glu Ala  
130 135 140

Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg  
145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg  
165 170 175

Tyr Lys Val Arg Arg Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Arg  
180 185 190

Asn His Pro Lys Leu Val Asn Thr Pro Trp Tyr Tyr Asp Pro Ala Met  
195 200 205

Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Val Thr Leu  
225 230 235 240

Leu Ala Lys Asn Leu Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
260 265 270

Trp Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala  
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Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala  
290 295 300

Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Lys Leu Leu Gln  
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PHOE0136.ST25.txt

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Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
340 345 350

Tyr Ile Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
355 360 365

Lys Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Lys Val Leu Pro Phe  
370 375 380

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50 55 60

Leu Lys Ala Asn Asp Ile Asn Val Val Glu Thr Ile Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Arg Lys Ile Glu  
85 90 95

Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Ala His Glu Lys  
100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
115 120 125

Glu Leu Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Val Glu Ala  
130 135 140

Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg  
Page 14

145 150 160  
 Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg  
 165 170 175  
 Tyr Lys Val Arg Arg Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Arg  
 180 185 190  
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 195 200 205  
 Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
 210 215 220  
 Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Val Thr Leu  
 225 230 235 240  
 Leu Ala Lys Asn Leu Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
 245 250 255  
 Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
 260 265 270  
 Trp Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala  
 275 280 285  
 Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala  
 290 295 300  
 Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Lys Leu Leu Gln  
 305 310 315 320  
 Ser Ile Ile Asn Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Glu Gly  
 325 330 335  
 Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
 340 345 350  
 Tyr Ile Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
 355 360 365  
 Lys Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Lys Val Leu Pro Phe  
 370 375 380  
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 Met Pro Leu Ser Arg Lys Asp Val Lys  
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## PHOE0136.ST25.txt

&lt;211&gt; 409

&lt;212&gt; PRT

&lt;213&gt; Mycoplasma arthritidis

&lt;400&gt; 10

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Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile  
35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu Gln Ser Gln Phe Val Ala Ile  
50 55 60

Leu Lys Ala Asn Asp Ile Asn Val Val Glu Thr Ile Asp Leu Val Ala  
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Arg Lys Ile Glu  
85 90 95

Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Ala His Lys Glu  
100 105 110

Val Val Arg Asn Phe Leu Lys Ala Lys Lys Thr Ser Arg Lys Leu Val  
115 120 125

Glu Leu Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Val Glu Ala  
130 135 140

Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg  
145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg  
165 170 175

Tyr Lys Val Arg Arg Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Arg  
180 185 190

Asn His Pro Lys Leu Val Asn Thr Pro Trp Tyr Tyr Asp Pro Ala Met  
195 200 205

Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr  
210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Val Thr Leu  
225 230 235 240

Leu Ala Lys Asn Leu Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile  
245 250 255



PHOE0136.ST25.txt

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr  
260 265 270

Trp Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala  
275 280 285

Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala  
290 295 300

Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Lys Leu Leu Gln  
305 310 315 320

Ser Ile Ile Asn Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Glu Gly  
325 330 335

Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn  
340 345 350

Tyr Ile Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu  
355 360 365

Lys Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Lys Val Leu Pro Phe  
370 375 380

His Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser  
385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys  
405